

GEW136-14

610.1, 610.1.2, 610.5 (New), 610.5.1 (New), 610.5.2 (New), 610.5.3 (New), 610.6 (New), 610.6.1 (New), 610.6.2 (New), 610.6.3 (New)

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Revise as follows:

610.1 Renewable energy systems requirements. Buildings that consume energy shall comply with this section. Each building or surrounding lot or building site where there are multiple buildings on the building site shall be equipped with one or more renewable energy systems in accordance with this section.

Renewable energy systems shall comply with the requirements of Section 610.2 for solar photovoltaic systems, Section 610.3 for wind systems, ~~or~~ Section 610.4 for solar water heating systems, Section 610.5 for biogas systems, or Section 610.6 for biomass systems, and shall comply with Section ~~610.5~~ 610.7 for performance monitoring and metering of these systems as *approved* by the *code official*. These systems shall be commissioned in accordance with the requirements of Section 611.

Exception: Renewable energy systems are not required for the following:

1. Buildings or building sites where there are multiple buildings on the building site providing not less than 2 percent of the total estimated annual energy use of the building, or collective buildings on the site, with onsite renewable energy using a combination of renewable energy generation systems complying with the requirements of Section 610.2, 610.3, ~~or~~ 610.4, 610.5, or 610.6.
2. Where not less than 4 percent of the total annual building energy consumption from renewable generation takes the form of a 10-year commitment to *renewable energy credit* ownership, confirmed by the *code official*.
3. Where the combined application of onsite generated renewable energy and a commitment to *renewable energy credit* ownership as confirmed by the *code official*, totals not less than 4 percent of the total annual building energy consumption from renewable generation.

610.1.2 Building prescriptive compliance. Buildings and surrounding property or building sites where there are multiple buildings on the building site, that are designed and constructed in accordance with Section 601.3.2, prescriptive compliance, shall be equipped with one or more renewable energy systems that have the capacity to provide not less than 2 percent of the total estimated annual energy use of the building, or collective buildings on the building site, with onsite renewable energy by calculation demonstrating that onsite renewable energy production has a rating of not less than 1.75 Btu/h (0.5 W) or not less than 0.50 watts per square foot of conditioned floor area, and using any single or combination of renewable energy generation systems meeting the requirements of Sections 610.2, 610.3, ~~or~~ 610.4, 610.5, or 610.6.

610.5 Biogas energy systems. Biogas energy systems shall be designed, constructed, and sized to provide not less than 2 percent of the total estimated annual energy consumption of the building, or collective buildings on the building site in accordance with Section 610.1.1 or 610.1.2.

610.5.1 Installation, location, and structural requirements. Biogas energy systems shall be located in the building, on the building, adjacent to the building, or on the building site.

610.5.2 On-site waste materials. Only waste materials that are produced at the building or building site shall be allowed to be used in the biogas system. Transportation of waste materials to the building or building site is prohibited.

610.5.3 Gas mixing. Biogas shall not be mixed with other fuel gases at the building or building site, except where the on-site appliances using the fuel gases are in compliance with the applicable mechanical and safety code requirements relative to the mixing of different types of fuel gases.

610.6 Biomass energy systems. Biomass energy systems shall be designed, constructed, and sized to provide not less than 2 percent of the total estimated annual energy consumption of the building, or collective buildings on the building site in accordance with Section 610.1.1 or 610.1.2.

610.6.1 Installation, location, and structural requirements. Biomass energy systems shall be located in the building, on the building, adjacent to the building, or on the building site.

610.6.2 On-site biomass materials. Only those biomass materials that are produced at the building or building site shall be used in the biomass system. Transportation of biomass materials produced at the building or building site to another building or building site is prohibited.

610.6.3 Biomass co-firing. Biomass shall not be mixed with other types of fuel at the building or building site, except where the on-site appliances using the fuel are in compliance with the applicable mechanical and safety code requirements relative to the use and mixing of biomass with other types of fuel.

Reason: Biogas and biomass are listed as renewable energy sources in the IgCC, but there is no language in Section 610 that would allow such systems to meet the renewable energy requirements of Section 610.

This code change will allow biogas and biomass systems to meet the renewable energy requirements of the code. This will allow building owners more flexibility and more options to meet the requirements, especially in areas that have poor solar and/or wind resources.

The new text provides language for on-site renewable biogas biomass systems that is consistent with the requirements for on-site renewable electric systems.

In addition, as an alternative and to be consistent with requirements shown in Section 610.4, the value could be increased to 10%, since biogas and biomass energy systems are likely to have smaller footprints (in terms of area or volume of space needed for similar energy outputs) and a higher "energy density" than other on-site renewable energy systems.

Other changes are editorial and provided to show the changes to the Section numbering.

Cost Impact: Will not increase the cost of construction. This will provide more options for building owners, and is likely to reduce the cost of meeting the renewable energy requirements of the IgCC.

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